Release notes for ENDF/B Development n-068_Er_170 evaluation

April 26, 2017

- **checkr** Warnings:

    1. A previous error halted parsing of the current section
       MAT=6849, MF= 1, MT=451 (1): Parsing stopped

    ```
    ERROR(S) FOUND IN MAT=6849, MF= 1, MT=451
        SECTION CANNOT BE CHECKED FROM SEQUENCE NUMBER     173 TO     289
    ```

- **checkr** Errors:

    1. A variable is outside the allowed ENDF range
       MAT=6849, MF= 1, MT=451 (0): Variable range

    ```
    ERROR(S) FOUND IN MAT=6849, MF= 1, MT=451
        MOD =     1 OUT OF RANGE     0 -     0          RECORD NUMBER     173
    ```

    2. Missing a section in directory so your directory is messed up. This error will break everything else
       MAT=6849, MF= 2, MT=151 (0): Directory (b)

    ```
    ERROR(S) FOUND IN MAT=6849, MF= 2, MT=151
        SECTION  2/151 NOT IN DIRECTORY               RECORD NUMBER     291
    ```

    3. Missing a section in directory so your directory is messed up. This error will break everything else
       MAT=6849, MF= 3, MT= 1 (0): Directory (b)

    ```
    ERROR(S) FOUND IN MAT=6849, MF= 3, MT=  1
        SECTION  3/  1 NOT IN DIRECTORY               RECORD NUMBER     510
    ```

    4. Missing a section in directory so your directory is messed up. This error will break everything else
       MAT=6849, MF= 3, MT= 2 (0): Directory (b)

    ```
    ERROR(S) FOUND IN MAT=6849, MF= 3, MT=  2
        SECTION  3/  2 NOT IN DIRECTORY               RECORD NUMBER     563
    ```

    5. Missing a section in directory so your directory is messed up. This error will break everything else
       MAT=6849, MF= 3, MT= 4 (0): Directory (b)

    ```
    ERROR(S) FOUND IN MAT=6849, MF= 3, MT=  4
        SECTION  3/  4 NOT IN DIRECTORY               RECORD NUMBER     616
    ```

    6. Missing a section in directory so your directory is messed up. This error will break everything else
       MAT=6849, MF= 3, MT= 16 (0): Directory (b)

    ```
    ERROR(S) FOUND IN MAT=6849, MF= 3, MT= 16
        SECTION  3/ 16 NOT IN DIRECTORY               RECORD NUMBER     635
    ```

    7. Missing a section in directory so your directory is messed up. This error will break everything else
       MAT=6849, MF= 3, MT= 17 (0): Directory (b)

1

```
      ERROR(S) FOUND IN MAT=6849, MF= 3, MT= 17
         SECTION  3/ 17 NOT IN DIRECTORY                RECORD NUMBER     657
```

8. Missing a section in directory so your directory is messed up. This error will break everything else
   MAT=6849, MF= 3, MT= 22 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=6849, MF= 3, MT= 22
         SECTION  3/ 22 NOT IN DIRECTORY                RECORD NUMBER     671
```

9. Missing a section in directory so your directory is messed up. This error will break everything else
   MAT=6849, MF= 3, MT= 28 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=6849, MF= 3, MT= 28
         SECTION  3/ 28 NOT IN DIRECTORY                RECORD NUMBER     695
```

10. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 3, MT= 32 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=6849, MF= 3, MT= 32
         SECTION  3/ 32 NOT IN DIRECTORY                RECORD NUMBER     713
```

11. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 3, MT= 51 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=6849, MF= 3, MT= 51
         SECTION  3/ 51 NOT IN DIRECTORY                RECORD NUMBER     725
```

12. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 3, MT= 52 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=6849, MF= 3, MT= 52
         SECTION  3/ 52 NOT IN DIRECTORY                RECORD NUMBER     740
```

13. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 3, MT= 53 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=6849, MF= 3, MT= 53
         SECTION  3/ 53 NOT IN DIRECTORY                RECORD NUMBER     754
```

14. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 3, MT= 54 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=6849, MF= 3, MT= 54
         SECTION  3/ 54 NOT IN DIRECTORY                RECORD NUMBER     768
```

15. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 3, MT= 55 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 3, MT= 55
           SECTION  3/ 55 NOT IN DIRECTORY                RECORD NUMBER     781
```

16. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT{=}6849$, $MF{=}$ 3, $MT{=}$ 56 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 3, MT= 56
           SECTION  3/ 56 NOT IN DIRECTORY                RECORD NUMBER     794
```

17. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT{=}6849$, $MF{=}$ 3, $MT{=}$ 57 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 3, MT= 57
           SECTION  3/ 57 NOT IN DIRECTORY                RECORD NUMBER     807
```

18. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT{=}6849$, $MF{=}$ 3, $MT{=}$ 58 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 3, MT= 58
           SECTION  3/ 58 NOT IN DIRECTORY                RECORD NUMBER     820
```

19. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT{=}6849$, $MF{=}$ 3, $MT{=}$ 59 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 3, MT= 59
           SECTION  3/ 59 NOT IN DIRECTORY                RECORD NUMBER     833
```

20. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT{=}6849$, $MF{=}$ 3, $MT{=}$ 60 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 3, MT= 60
           SECTION  3/ 60 NOT IN DIRECTORY                RECORD NUMBER     846
```

21. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT{=}6849$, $MF{=}$ 3, $MT{=}$ 61 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 3, MT= 61
           SECTION  3/ 61 NOT IN DIRECTORY                RECORD NUMBER     859
```

22. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT{=}6849$, $MF{=}$ 3, $MT{=}$ 62 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 3, MT= 62
           SECTION  3/ 62 NOT IN DIRECTORY                RECORD NUMBER     871
```

23. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT{=}6849$, $MF{=}$ 3, $MT{=}$ 63 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=6849, MF= 3, MT= 63
         SECTION  3/ 63 NOT IN DIRECTORY                RECORD NUMBER     883
```

24. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 3, MT= 64 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=6849, MF= 3, MT= 64
         SECTION  3/ 64 NOT IN DIRECTORY                RECORD NUMBER     895
```

25. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 3, MT= 91 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=6849, MF= 3, MT= 91
         SECTION  3/ 91 NOT IN DIRECTORY                RECORD NUMBER     907
```

26. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 3, MT=102 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=6849, MF= 3, MT=102
         SECTION  3/102 NOT IN DIRECTORY                RECORD NUMBER     919
```

27. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 3, MT=103 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=6849, MF= 3, MT=103
         SECTION  3/103 NOT IN DIRECTORY                RECORD NUMBER     964
```

28. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 3, MT=104 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=6849, MF= 3, MT=104
         SECTION  3/104 NOT IN DIRECTORY                RECORD NUMBER     990
```

29. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 3, MT=105 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=6849, MF= 3, MT=105
         SECTION  3/105 NOT IN DIRECTORY                RECORD NUMBER    1011
```

30. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 3, MT=107 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=6849, MF= 3, MT=107
         SECTION  3/107 NOT IN DIRECTORY                RECORD NUMBER    1031
```

31. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 4, MT= 2 (0): Directory (b)

4

```
        ERROR(S) FOUND IN MAT=6849, MF= 4, MT=  2
           SECTION  4/  2 NOT IN DIRECTORY                  RECORD NUMBER    1069
```

32. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 4, MT= 16 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 4, MT= 16
           SECTION  4/ 16 NOT IN DIRECTORY                  RECORD NUMBER    1211
```

33. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 4, MT= 17 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 4, MT= 17
           SECTION  4/ 17 NOT IN DIRECTORY                  RECORD NUMBER    1214
```

34. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 4, MT= 22 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 4, MT= 22
           SECTION  4/ 22 NOT IN DIRECTORY                  RECORD NUMBER    1217
```

35. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 4, MT= 28 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 4, MT= 28
           SECTION  4/ 28 NOT IN DIRECTORY                  RECORD NUMBER    1220
```

36. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 4, MT= 32 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 4, MT= 32
           SECTION  4/ 32 NOT IN DIRECTORY                  RECORD NUMBER    1223
```

37. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 4, MT= 51 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 4, MT= 51
           SECTION  4/ 51 NOT IN DIRECTORY                  RECORD NUMBER    1226
```

38. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 4, MT= 52 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 4, MT= 52
           SECTION  4/ 52 NOT IN DIRECTORY                  RECORD NUMBER    1391
```

39. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 4, MT= 53 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 4, MT= 53
          SECTION  4/ 53 NOT IN DIRECTORY                RECORD NUMBER    1507
```

40. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 4, MT= 54 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 4, MT= 54
          SECTION  4/ 54 NOT IN DIRECTORY                RECORD NUMBER    1614
```

41. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 4, MT= 55 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 4, MT= 55
          SECTION  4/ 55 NOT IN DIRECTORY                RECORD NUMBER    1713
```

42. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 4, MT= 56 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 4, MT= 56
          SECTION  4/ 56 NOT IN DIRECTORY                RECORD NUMBER    1810
```

43. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 4, MT= 57 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 4, MT= 57
          SECTION  4/ 57 NOT IN DIRECTORY                RECORD NUMBER    1907
```

44. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 4, MT= 58 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 4, MT= 58
          SECTION  4/ 58 NOT IN DIRECTORY                RECORD NUMBER    2004
```

45. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 4, MT= 59 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 4, MT= 59
          SECTION  4/ 59 NOT IN DIRECTORY                RECORD NUMBER    2097
```

46. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 4, MT= 60 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 4, MT= 60
          SECTION  4/ 60 NOT IN DIRECTORY                RECORD NUMBER    2189
```

47. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 4, MT= 61 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 4, MT= 61
          SECTION  4/ 61 NOT IN DIRECTORY                   RECORD NUMBER    2281
```

48. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 4, MT= 62 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 4, MT= 62
          SECTION  4/ 62 NOT IN DIRECTORY                   RECORD NUMBER    2373
```

49. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 4, MT= 63 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 4, MT= 63
          SECTION  4/ 63 NOT IN DIRECTORY                   RECORD NUMBER    2465
```

50. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 4, MT= 64 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 4, MT= 64
          SECTION  4/ 64 NOT IN DIRECTORY                   RECORD NUMBER    2555
```

51. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 4, MT= 91 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 4, MT= 91
          SECTION  4/ 91 NOT IN DIRECTORY                   RECORD NUMBER    2645
```

52. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 5, MT= 16 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 5, MT= 16
          SECTION  5/ 16 NOT IN DIRECTORY                   RECORD NUMBER    2738
```

53. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 5, MT= 17 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 5, MT= 17
          SECTION  5/ 17 NOT IN DIRECTORY                   RECORD NUMBER    3067
```

54. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 5, MT= 22 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 5, MT= 22
          SECTION  5/ 22 NOT IN DIRECTORY                   RECORD NUMBER    3230
```

55. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 5, MT= 28 (0): Directory (b)

7

```
        ERROR(S) FOUND IN MAT=6849, MF= 5, MT= 28
            SECTION  5/ 28 NOT IN DIRECTORY                RECORD NUMBER    3632
```

56. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 5, MT= 32 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 5, MT= 32
            SECTION  5/ 32 NOT IN DIRECTORY                RECORD NUMBER    3877
```

57. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF= 5, MT= 91 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF= 5, MT= 91
            SECTION  5/ 91 NOT IN DIRECTORY                RECORD NUMBER    4016
```

58. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF=12, MT= 16 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF=12, MT= 16
            SECTION 12/ 16 NOT IN DIRECTORY                RECORD NUMBER    4492
```

59. Missing a gamma spectrum for continuum of gammas
    MAT=6849, MF=12, MT= 16 (1): No gamma spectrum

```
        ERROR(S) FOUND IN MAT=6849, MF=12, MT= 16
            CONTINUUM PHOTONS REQUIRE A SECTION IN MF=15
```

60. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF=12, MT= 17 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF=12, MT= 17
            SECTION 12/ 17 NOT IN DIRECTORY                RECORD NUMBER    4501
```

61. Missing a gamma spectrum for continuum of gammas
    MAT=6849, MF=12, MT= 17 (1): No gamma spectrum

```
        ERROR(S) FOUND IN MAT=6849, MF=12, MT= 17
            CONTINUUM PHOTONS REQUIRE A SECTION IN MF=15
```

62. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF=12, MT= 22 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=6849, MF=12, MT= 22
            SECTION 12/ 22 NOT IN DIRECTORY                RECORD NUMBER    4508
```

63. Missing a gamma spectrum for continuum of gammas
    MAT=6849, MF=12, MT= 22 (1): No gamma spectrum

```
        ERROR(S) FOUND IN MAT=6849, MF=12, MT= 22
            CONTINUUM PHOTONS REQUIRE A SECTION IN MF=15
```

64. Missing a section in directory so your directory is messed up. This error will break everything else
$MAT=6849, MF=12, MT=28$ (0): Directory (b)

```
     ERROR(S) FOUND IN MAT=6849, MF=12, MT= 28
        SECTION 12/ 28 NOT IN DIRECTORY              RECORD NUMBER    4518
```

65. Missing a gamma spectrum for continuum of gammas
$MAT=6849, MF=12, MT=28$ (1): No gamma spectrum

```
     ERROR(S) FOUND IN MAT=6849, MF=12, MT= 28
        CONTINUUM PHOTONS REQUIRE A SECTION IN MF=15
```

66. Missing a section in directory so your directory is messed up. This error will break everything else
$MAT=6849, MF=12, MT=51$ (0): Directory (b)

```
     ERROR(S) FOUND IN MAT=6849, MF=12, MT= 51
        SECTION 12/ 51 NOT IN DIRECTORY              RECORD NUMBER    4526
```

67. Missing a section in directory so your directory is messed up. This error will break everything else
$MAT=6849, MF=12, MT=52$ (0): Directory (b)

```
     ERROR(S) FOUND IN MAT=6849, MF=12, MT= 52
        SECTION 12/ 52 NOT IN DIRECTORY              RECORD NUMBER    4530
```

68. Missing a section in directory so your directory is messed up. This error will break everything else
$MAT=6849, MF=12, MT=53$ (0): Directory (b)

```
     ERROR(S) FOUND IN MAT=6849, MF=12, MT= 53
        SECTION 12/ 53 NOT IN DIRECTORY              RECORD NUMBER    4534
```

69. Missing a section in directory so your directory is messed up. This error will break everything else
$MAT=6849, MF=12, MT=54$ (0): Directory (b)

```
     ERROR(S) FOUND IN MAT=6849, MF=12, MT= 54
        SECTION 12/ 54 NOT IN DIRECTORY              RECORD NUMBER    4538
```

70. Missing a section in directory so your directory is messed up. This error will break everything else
$MAT=6849, MF=12, MT=55$ (0): Directory (b)

```
     ERROR(S) FOUND IN MAT=6849, MF=12, MT= 55
        SECTION 12/ 55 NOT IN DIRECTORY              RECORD NUMBER    4542
```

71. Missing a section in directory so your directory is messed up. This error will break everything else
$MAT=6849, MF=12, MT=56$ (0): Directory (b)

```
     ERROR(S) FOUND IN MAT=6849, MF=12, MT= 56
        SECTION 12/ 56 NOT IN DIRECTORY              RECORD NUMBER    4546
```

72. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6849, MF=12, MT= 57 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=6849, MF=12, MT= 57
    SECTION 12/ 57 NOT IN DIRECTORY                RECORD NUMBER    4551
```

73. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6849, MF=12, MT= 58 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=6849, MF=12, MT= 58
    SECTION 12/ 58 NOT IN DIRECTORY                RECORD NUMBER    4556
```

74. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6849, MF=12, MT= 59 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=6849, MF=12, MT= 59
    SECTION 12/ 59 NOT IN DIRECTORY                RECORD NUMBER    4560
```

75. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6849, MF=12, MT= 60 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=6849, MF=12, MT= 60
    SECTION 12/ 60 NOT IN DIRECTORY                RECORD NUMBER    4565
```

76. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6849, MF=12, MT= 61 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=6849, MF=12, MT= 61
    SECTION 12/ 61 NOT IN DIRECTORY                RECORD NUMBER    4570
```

77. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6849, MF=12, MT= 62 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=6849, MF=12, MT= 62
    SECTION 12/ 62 NOT IN DIRECTORY                RECORD NUMBER    4575
```

78. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6849, MF=12, MT= 63 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=6849, MF=12, MT= 63
    SECTION 12/ 63 NOT IN DIRECTORY                RECORD NUMBER    4579
```

79. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6849, MF=12, MT= 64 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=6849, MF=12, MT= 64
    SECTION 12/ 64 NOT IN DIRECTORY                RECORD NUMBER    4583
```

80. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6849, MF=12, MT= 91 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=6849, MF=12, MT= 91
       SECTION 12/ 91 NOT IN DIRECTORY                  RECORD NUMBER    4589
```

81. Missing a gamma spectrum for continuum of gammas
MAT=6849, MF=12, MT= 91 (1): No gamma spectrum

```
    ERROR(S) FOUND IN MAT=6849, MF=12, MT= 91
       CONTINUUM PHOTONS REQUIRE A SECTION IN MF=15
```

82. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6849, MF=12, MT=102 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=6849, MF=12, MT=102
       SECTION 12/102 NOT IN DIRECTORY                  RECORD NUMBER    4600
```

83. Missing a gamma spectrum for continuum of gammas
MAT=6849, MF=12, MT=102 (1): No gamma spectrum

```
    ERROR(S) FOUND IN MAT=6849, MF=12, MT=102
       CONTINUUM PHOTONS REQUIRE A SECTION IN MF=15
```

84. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6849, MF=12, MT=103 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=6849, MF=12, MT=103
       SECTION 12/103 NOT IN DIRECTORY                  RECORD NUMBER    4614
```

85. Missing a gamma spectrum for continuum of gammas
MAT=6849, MF=12, MT=103 (1): No gamma spectrum

```
    ERROR(S) FOUND IN MAT=6849, MF=12, MT=103
       CONTINUUM PHOTONS REQUIRE A SECTION IN MF=15
```

86. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6849, MF=12, MT=104 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=6849, MF=12, MT=104
       SECTION 12/104 NOT IN DIRECTORY                  RECORD NUMBER    4624
```

87. Missing a gamma spectrum for continuum of gammas
MAT=6849, MF=12, MT=104 (1): No gamma spectrum

```
    ERROR(S) FOUND IN MAT=6849, MF=12, MT=104
       CONTINUUM PHOTONS REQUIRE A SECTION IN MF=15
```

88. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6849, MF=12, MT=107 (0): Directory (b)

11

```
    ERROR(S) FOUND IN MAT=6849, MF=12, MT=107
        SECTION 12/107 NOT IN DIRECTORY                  RECORD NUMBER    4633
```

89. Missing a gamma spectrum for continuum of gammas
    MAT=6849, MF=12, MT=107 (1): No gamma spectrum

```
    ERROR(S) FOUND IN MAT=6849, MF=12, MT=107
        CONTINUUM PHOTONS REQUIRE A SECTION IN MF=15
```

90. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF=14, MT= 16 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=6849, MF=14, MT= 16
        SECTION 14/ 16 NOT IN DIRECTORY                  RECORD NUMBER    4646
```

91. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF=14, MT= 17 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=6849, MF=14, MT= 17
        SECTION 14/ 17 NOT IN DIRECTORY                  RECORD NUMBER    4648
```

92. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF=14, MT= 22 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=6849, MF=14, MT= 22
        SECTION 14/ 22 NOT IN DIRECTORY                  RECORD NUMBER    4650
```

93. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF=14, MT= 28 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=6849, MF=14, MT= 28
        SECTION 14/ 28 NOT IN DIRECTORY                  RECORD NUMBER    4652
```

94. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF=14, MT= 51 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=6849, MF=14, MT= 51
        SECTION 14/ 51 NOT IN DIRECTORY                  RECORD NUMBER    4654
```

95. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF=14, MT= 52 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=6849, MF=14, MT= 52
        SECTION 14/ 52 NOT IN DIRECTORY                  RECORD NUMBER    4656
```

96. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF=14, MT= 53 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=6849, MF=14, MT= 53
        SECTION 14/ 53 NOT IN DIRECTORY                  RECORD NUMBER    4658
```

97. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF=14, MT= 54 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=6849, MF=14, MT= 54
       SECTION 14/ 54 NOT IN DIRECTORY                 RECORD NUMBER    4660
```

98. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF=14, MT= 55 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=6849, MF=14, MT= 55
       SECTION 14/ 55 NOT IN DIRECTORY                 RECORD NUMBER    4662
```

99. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF=14, MT= 56 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=6849, MF=14, MT= 56
       SECTION 14/ 56 NOT IN DIRECTORY                 RECORD NUMBER    4664
```

100. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF=14, MT= 57 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=6849, MF=14, MT= 57
       SECTION 14/ 57 NOT IN DIRECTORY                 RECORD NUMBER    4666
```

101. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF=14, MT= 58 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=6849, MF=14, MT= 58
       SECTION 14/ 58 NOT IN DIRECTORY                 RECORD NUMBER    4668
```

102. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF=14, MT= 59 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=6849, MF=14, MT= 59
       SECTION 14/ 59 NOT IN DIRECTORY                 RECORD NUMBER    4670
```

103. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF=14, MT= 60 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=6849, MF=14, MT= 60
       SECTION 14/ 60 NOT IN DIRECTORY                 RECORD NUMBER    4672
```

104. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=6849, MF=14, MT= 61 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=6849, MF=14, MT= 61
       SECTION 14/ 61 NOT IN DIRECTORY                 RECORD NUMBER    4674
```

105. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6849, MF=14, MT= 62 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=6849, MF=14, MT= 62
       SECTION 14/ 62 NOT IN DIRECTORY              RECORD NUMBER    4676
```

106. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6849, MF=14, MT= 63 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=6849, MF=14, MT= 63
       SECTION 14/ 63 NOT IN DIRECTORY              RECORD NUMBER    4678
```

107. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6849, MF=14, MT= 64 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=6849, MF=14, MT= 64
       SECTION 14/ 64 NOT IN DIRECTORY              RECORD NUMBER    4680
```

108. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6849, MF=14, MT= 91 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=6849, MF=14, MT= 91
       SECTION 14/ 91 NOT IN DIRECTORY              RECORD NUMBER    4682
```

109. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6849, MF=14, MT=102 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=6849, MF=14, MT=102
       SECTION 14/102 NOT IN DIRECTORY              RECORD NUMBER    4684
```

110. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6849, MF=14, MT=103 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=6849, MF=14, MT=103
       SECTION 14/103 NOT IN DIRECTORY              RECORD NUMBER    4686
```

111. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6849, MF=14, MT=104 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=6849, MF=14, MT=104
       SECTION 14/104 NOT IN DIRECTORY              RECORD NUMBER    4688
```

112. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6849, MF=14, MT=107 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=6849, MF=14, MT=107
       SECTION 14/107 NOT IN DIRECTORY              RECORD NUMBER    4690
```

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113. Missing a section in directory so your directory is messed up. This error will break everything else
$MAT=6849$, $MF=15$, $MT=16$ (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=6849, MF=15, MT= 16
         SECTION 15/ 16 NOT IN DIRECTORY                RECORD NUMBER    4693
```

114. Missing a section in directory so your directory is messed up. This error will break everything else
$MAT=6849$, $MF=15$, $MT=17$ (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=6849, MF=15, MT= 17
         SECTION 15/ 17 NOT IN DIRECTORY                RECORD NUMBER    4832
```

115. Missing a section in directory so your directory is messed up. This error will break everything else
$MAT=6849$, $MF=15$, $MT=22$ (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=6849, MF=15, MT= 22
         SECTION 15/ 22 NOT IN DIRECTORY                RECORD NUMBER    4885
```

116. Missing a section in directory so your directory is messed up. This error will break everything else
$MAT=6849$, $MF=15$, $MT=28$ (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=6849, MF=15, MT= 28
         SECTION 15/ 28 NOT IN DIRECTORY                RECORD NUMBER    5048
```

117. Missing a section in directory so your directory is messed up. This error will break everything else
$MAT=6849$, $MF=15$, $MT=91$ (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=6849, MF=15, MT= 91
         SECTION 15/ 91 NOT IN DIRECTORY                RECORD NUMBER    5169
```

118. Missing a section in directory so your directory is messed up. This error will break everything else
$MAT=6849$, $MF=15$, $MT=102$ (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=6849, MF=15, MT=102
         SECTION 15/102 NOT IN DIRECTORY                RECORD NUMBER    5470
```

119. Missing a section in directory so your directory is messed up. This error will break everything else
$MAT=6849$, $MF=15$, $MT=103$ (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=6849, MF=15, MT=103
         SECTION 15/103 NOT IN DIRECTORY                RECORD NUMBER    6005
```

120. Missing a section in directory so your directory is messed up. This error will break everything else
$MAT=6849$, $MF=15$, $MT=104$ (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=6849, MF=15, MT=104
         SECTION 15/104 NOT IN DIRECTORY                RECORD NUMBER    6195
```

121. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6849, MF=15, MT=107 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=6849, MF=15, MT=107
    SECTION 15/107 NOT IN DIRECTORY              RECORD NUMBER    6322
```

122. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6849, MF=33, MT= 2 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=6849, MF=33, MT=  2
    SECTION 33/  2 NOT IN DIRECTORY              RECORD NUMBER    6613
```

123. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6849, MF=33, MT= 4 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=6849, MF=33, MT=  4
    SECTION 33/  4 NOT IN DIRECTORY              RECORD NUMBER    6703
```

124. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6849, MF=33, MT= 16 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=6849, MF=33, MT= 16
    SECTION 33/ 16 NOT IN DIRECTORY              RECORD NUMBER    6766
```

125. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6849, MF=33, MT=102 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=6849, MF=33, MT=102
    SECTION 33/102 NOT IN DIRECTORY              RECORD NUMBER    6780
```

- `psyche` Warnings:

1. Strength function in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 5.00000E+03. STRENGTH FUNCTION IS 2.02583E-04 / AVERAGE GAMMA WIDTH 2.36453E-02 / LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV. (0): URR str. ftn.

```
FILE  2
   SECTION 151
        ENERGY =  5.00000E+03. STRENGTH FUNCTION IS  2.02583E-04
                      AVERAGE GAMMA WIDTH 2.36453E-02
                                        LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV.
```

2. Strength function in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 5.00000E+03. STRENGTH FUNCTION IS 2.02583E-04 / AVERAGE GAMMA WIDTH 2.36567E-02 / LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV. (0): URR str. ftn.

```
FILE  2
   SECTION 151
        ENERGY =  5.00000E+03. STRENGTH FUNCTION IS   2.02583E-04
                         AVERAGE GAMMA WIDTH 2.36567E-02
                                        LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV.
```

3. Strength function in URR not in agreement with PSYCHE's expectations
   FILE 2 / SECTION 151 / ENERGY = 5.00000E+03. STRENGTH FUNCTION IS 2.02583E-04 / AVERAGE GAMMA WIDTH 2.36795E-02 / LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV. (0): URR str. ftn.

```
FILE  2
   SECTION 151
        ENERGY =  5.00000E+03. STRENGTH FUNCTION IS   2.02583E-04
                         AVERAGE GAMMA WIDTH 2.36795E-02
                                        LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV.
```

4. Strength function in URR not in agreement with PSYCHE's expectations
   FILE 2 / SECTION 151 / ENERGY = 5.00000E+03. STRENGTH FUNCTION IS 2.02583E-04 / AVERAGE GAMMA WIDTH 2.37019E-02 / LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV. (0): URR str. ftn.

```
FILE  2
   SECTION 151
        ENERGY =  5.00000E+03. STRENGTH FUNCTION IS   2.02583E-04
                         AVERAGE GAMMA WIDTH 2.37019E-02
                                        LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV.
```

5. Strength function in URR not in agreement with PSYCHE's expectations
   FILE 2 / SECTION 151 / ENERGY = 5.00000E+03. STRENGTH FUNCTION IS 2.02583E-04 / AVERAGE GAMMA WIDTH 2.37241E-02 / LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV. (0): URR str. ftn.

```
FILE  2
   SECTION 151
        ENERGY =  5.00000E+03. STRENGTH FUNCTION IS   2.02583E-04
                         AVERAGE GAMMA WIDTH 2.37241E-02
                                        LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV.
```

6. Strength function in URR not in agreement with PSYCHE's expectations
   FILE 2 / SECTION 151 / ENERGY = 5.00000E+03. STRENGTH FUNCTION IS 2.02583E-04 / AVERAGE GAMMA WIDTH 2.37569E-02 / LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV. (0): URR str. ftn.

```
FILE  2
   SECTION 151
        ENERGY =  5.00000E+03. STRENGTH FUNCTION IS   2.02583E-04
                         AVERAGE GAMMA WIDTH 2.37569E-02
                                        LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV.
```

7. Strength function in URR not in agreement with PSYCHE's expectations
   FILE 2 / SECTION 151 / ENERGY = 5.00000E+03. STRENGTH FUNCTION IS 2.02583E-04 / AVERAGE GAMMA WIDTH 2.38101E-02 / LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV. (0): URR str. ftn.

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```
FILE  2
   SECTION 151
        ENERGY =  5.00000E+03. STRENGTH FUNCTION IS   2.02583E-04
                        AVERAGE GAMMA WIDTH 2.38101E-02
                                    LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV.
```

8. Strength function in URR not in agreement with PSYCHE's expectations
   FILE 2 / SECTION 151 / ENERGY = 5.00000E+03. STRENGTH FUNCTION IS 2.02583E-04 / AVERAGE GAMMA WIDTH 2.38617E-02 / LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV. (0): URR str. ftn.

```
FILE  2
   SECTION 151
        ENERGY =  5.00000E+03. STRENGTH FUNCTION IS   2.02583E-04
                        AVERAGE GAMMA WIDTH 2.38617E-02
                                    LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV.
```

9. Strength function in URR not in agreement with PSYCHE's expectations
   FILE 2 / SECTION 151 / ENERGY = 5.00000E+03. STRENGTH FUNCTION IS 2.02583E-04 / AVERAGE GAMMA WIDTH 2.39116E-02 / LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV. (0): URR str. ftn.

```
FILE  2
   SECTION 151
        ENERGY =  5.00000E+03. STRENGTH FUNCTION IS   2.02583E-04
                        AVERAGE GAMMA WIDTH 2.39116E-02
                                    LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV.
```

10. Strength function in URR not in agreement with PSYCHE's expectations
    FILE 2 / SECTION 151 / ENERGY = 5.00000E+03. STRENGTH FUNCTION IS 2.02583E-04 / AVERAGE GAMMA WIDTH 2.40065E-02 / LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV. (0): URR str. ftn.

```
FILE  2
   SECTION 151
        ENERGY =  5.00000E+03. STRENGTH FUNCTION IS   2.02583E-04
                        AVERAGE GAMMA WIDTH 2.40065E-02
                                    LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV.
```

11. Strength function in URR not in agreement with PSYCHE's expectations
    FILE 2 / SECTION 151 / ENERGY = 5.00000E+03. STRENGTH FUNCTION IS 2.02583E-04 / AVERAGE GAMMA WIDTH 2.40950E-02 / LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV. (0): URR str. ftn.

```
FILE  2
   SECTION 151
        ENERGY =  5.00000E+03. STRENGTH FUNCTION IS   2.02583E-04
                        AVERAGE GAMMA WIDTH 2.40950E-02
                                    LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV.
```

12. Strength function in URR not in agreement with PSYCHE's expectations
    FILE 2 / SECTION 151 / ENERGY = 5.00000E+03. STRENGTH FUNCTION IS 2.02583E-04 / AVERAGE GAMMA WIDTH 2.41773E-02 / LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV. (0): URR str. ftn.

```
FILE  2
   SECTION 151
        ENERGY =  5.00000E+03. STRENGTH FUNCTION IS   2.02583E-04
                         AVERAGE GAMMA WIDTH 2.41773E-02
                                    LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV.
```

13. Strength function in URR not in agreement with PSYCHE's expectations
    FILE 2 / SECTION 151 / ENERGY = 5.00000E+03. STRENGTH FUNCTION IS 2.02583E-04 / AVERAGE GAMMA WIDTH 2.42535E-02 / LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV. (0): URR str. ftn.

```
FILE  2
   SECTION 151
        ENERGY =  5.00000E+03. STRENGTH FUNCTION IS   2.02583E-04
                         AVERAGE GAMMA WIDTH 2.42535E-02
                                    LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV.
```

14. Strength function in URR not in agreement with PSYCHE's expectations
    FILE 2 / SECTION 151 / ENERGY = 5.00000E+03. STRENGTH FUNCTION IS 2.02583E-04 / AVERAGE GAMMA WIDTH 2.43180E-02 / LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV. (0): URR str. ftn.

```
FILE  2
   SECTION 151
        ENERGY =  5.00000E+03. STRENGTH FUNCTION IS   2.02583E-04
                         AVERAGE GAMMA WIDTH 2.43180E-02
                                    LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV.
```

15. Strength function in URR not in agreement with PSYCHE's expectations
    FILE 2 / SECTION 151 / ENERGY = 5.00000E+03. STRENGTH FUNCTION IS 2.02583E-04 / AVERAGE GAMMA WIDTH 2.18518E-02 / LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV. (0): URR str. ftn.

```
FILE  2
   SECTION 151
        ENERGY =  5.00000E+03. STRENGTH FUNCTION IS   2.02583E-04
                         AVERAGE GAMMA WIDTH 2.18518E-02
                                    LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV.
```

16. Strength function in URR not in agreement with PSYCHE's expectations
    FILE 2 / SECTION 151 / ENERGY = 5.00000E+03. STRENGTH FUNCTION IS 2.02583E-04 / AVERAGE GAMMA WIDTH 2.18621E-02 / LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV. (0): URR str. ftn.

```
FILE  2
   SECTION 151
        ENERGY =  5.00000E+03. STRENGTH FUNCTION IS   2.02583E-04
                         AVERAGE GAMMA WIDTH 2.18621E-02
                                    LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV.
```

17. Strength function in URR not in agreement with PSYCHE's expectations
    FILE 2 / SECTION 151 / ENERGY = 5.00000E+03. STRENGTH FUNCTION IS 2.02583E-04 / AVERAGE GAMMA WIDTH 2.18826E-02 / LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV. (0): URR str. ftn.

```
FILE  2
   SECTION 151
      ENERGY =  5.00000E+03. STRENGTH FUNCTION IS  2.02583E-04
                     AVERAGE GAMMA WIDTH 2.18826E-02
                                LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV.
```

18. Strength function in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 5.00000E+03. STRENGTH FUNCTION IS 2.02583E-04 / AVERAGE GAMMA WIDTH 2.19027E-02 / LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV. (0): URR str. ftn.

```
FILE  2
   SECTION 151
      ENERGY =  5.00000E+03. STRENGTH FUNCTION IS  2.02583E-04
                     AVERAGE GAMMA WIDTH 2.19027E-02
                                LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV.
```

19. Strength function in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 5.00000E+03. STRENGTH FUNCTION IS 2.02583E-04 / AVERAGE GAMMA WIDTH 2.19226E-02 / LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV. (0): URR str. ftn.

```
FILE  2
   SECTION 151
      ENERGY =  5.00000E+03. STRENGTH FUNCTION IS  2.02583E-04
                     AVERAGE GAMMA WIDTH 2.19226E-02
                                LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV.
```

20. Strength function in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 5.00000E+03. STRENGTH FUNCTION IS 2.02583E-04 / AVERAGE GAMMA WIDTH 2.19520E-02 / LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV. (0): URR str. ftn.

```
FILE  2
   SECTION 151
      ENERGY =  5.00000E+03. STRENGTH FUNCTION IS  2.02583E-04
                     AVERAGE GAMMA WIDTH 2.19520E-02
                                LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV.
```

21. Strength function in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 5.00000E+03. STRENGTH FUNCTION IS 2.02583E-04 / AVERAGE GAMMA WIDTH 2.19996E-02 / LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV. (0): URR str. ftn.

```
FILE  2
   SECTION 151
      ENERGY =  5.00000E+03. STRENGTH FUNCTION IS  2.02583E-04
                     AVERAGE GAMMA WIDTH 2.19996E-02
                                LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV.
```

22. Strength function in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 5.00000E+03. STRENGTH FUNCTION IS 2.02583E-04 / AVERAGE GAMMA WIDTH 2.20457E-02 / LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV. (0): URR str. ftn.

```
FILE  2
   SECTION 151
        ENERGY =  5.00000E+03. STRENGTH FUNCTION IS   2.02583E-04
                         AVERAGE GAMMA WIDTH 2.20457E-02
                                      LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV.
```

23. Strength function in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 5.00000E+03. STRENGTH FUNCTION IS 2.02583E-04 / AVERAGE GAMMA WIDTH 2.20902E-02 / LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV. (0): URR str. ftn.

```
FILE  2
   SECTION 151
        ENERGY =  5.00000E+03. STRENGTH FUNCTION IS   2.02583E-04
                         AVERAGE GAMMA WIDTH 2.20902E-02
                                      LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV.
```

24. Strength function in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 5.00000E+03. STRENGTH FUNCTION IS 2.02583E-04 / AVERAGE GAMMA WIDTH 2.21747E-02 / LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV. (0): URR str. ftn.

```
FILE  2
   SECTION 151
        ENERGY =  5.00000E+03. STRENGTH FUNCTION IS   2.02583E-04
                         AVERAGE GAMMA WIDTH 2.21747E-02
                                      LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV.
```

25. Strength function in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 5.00000E+03. STRENGTH FUNCTION IS 2.02583E-04 / AVERAGE GAMMA WIDTH 2.22532E-02 / LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV. (0): URR str. ftn.

```
FILE  2
   SECTION 151
        ENERGY =  5.00000E+03. STRENGTH FUNCTION IS   2.02583E-04
                         AVERAGE GAMMA WIDTH 2.22532E-02
                                      LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV.
```

26. Strength function in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 5.00000E+03. STRENGTH FUNCTION IS 2.02583E-04 / AVERAGE GAMMA WIDTH 2.23259E-02 / LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV. (0): URR str. ftn.

```
FILE  2
   SECTION 151
        ENERGY =  5.00000E+03. STRENGTH FUNCTION IS   2.02583E-04
                         AVERAGE GAMMA WIDTH 2.23259E-02
                                      LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV.
```

27. Strength function in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 5.00000E+03. STRENGTH FUNCTION IS 2.02583E-04 / AVERAGE GAMMA WIDTH 2.23928E-02 / LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV. (0): URR str. ftn.

```
                     FILE  2
                        SECTION 151
                              ENERGY =  5.00000E+03. STRENGTH FUNCTION IS  2.02583E-04
                                          AVERAGE GAMMA WIDTH 2.23928E-02
                                                      LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV.
```

28. Strength function in URR not in agreement with PSYCHE's expectations
    *FILE 2 / SECTION 151 / ENERGY = 5.00000E+03. STRENGTH FUNCTION IS
    2.02583E-04 / AVERAGE GAMMA WIDTH 2.24492E-02 / LIES OUTSIDE LIMITS
    4.00000E-02 TO 9.00000E+00 EV. (0): URR str. ftn.*

```
                     FILE  2
                        SECTION 151
                              ENERGY =  5.00000E+03. STRENGTH FUNCTION IS  2.02583E-04
                                          AVERAGE GAMMA WIDTH 2.24492E-02
                                                      LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV.
```

29. Non-threshold reaction with Q value differing from PSYCHE's expectations
    *FILE 3 / SECTION 107 / THE CALCULATED Q 5.83525E+06 DISSAGREES WITH
    THE GIVEN Q 5.46928E+06 (0): Iffy Q*

```
                     FILE  3
                        SECTION 107
                                 THE CALCULATED Q  5.83525E+06 DISSAGREES WITH THE GIVEN Q  5.46928E+06
```

- `groupie` Errors:

    1. Very small elastic cross section found
       0: Small elastic

    ```
        Multi-Group and Multi-Band Parameters from ENDF/B Data (GROUPIE 2015-2)
        ------------------------------------------------------------------------
        ENDF/B Input and Output Data Filenames
        ENDFB.IN
        ENDFB.OUT
        ... [97 more lines]
    ```

- `fudge-4.0` Warnings:

    1. Missing a channel with a particular angular momenta combination
       resonances / resolved / MultiLevel_BreitWigner (Error # 0): missingResonanceChannel

    ```
        WARNING: Missing a channel with angular momenta combination L = 0, J = 1.5 and S = 1.5 for "capture"
        WARNING: Missing a channel with angular momenta combination L = 1, J = 0.5 and S = 1.5 for "capture"
        WARNING: Missing a channel with angular momenta combination L = 1, J = 1.5 and S = 1.5 for "capture"
        WARNING: Missing a channel with angular momenta combination L = 1, J = 2.5 and S = 1.5 for "capture"
    ```

    2. Cross section does not match sum of linked reaction cross sections
       crossSectionSum label 0: total (Error # 0): CS Sum.

    ```
        WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 0.15%
    ```

    3. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
       Section 0 (n + Er170): / Form 'eval': / Component 0 (Error # 0): Condition num.

22

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

4. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
   Section 0 (n + Er170): / Form 'eval': / Component 1 (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

5. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
   Section 1 ((z,n)): / Form 'eval': (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

6. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
   Section 2 (n[multiplicity:'2'] + Er169 + gamma): / Form 'eval': (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

7. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
   Section 3 (Er171 + gamma): / Form 'eval': / Component 0 (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

8. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
   Section 3 (Er171 + gamma): / Form 'eval': / Component 1 (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

- `fudge-4.0` Errors:

  1. Found a negative probability
     reaction label 1: n + Er170_e1 / Product: n / Distribution: / angularTwoBody - XYs2d: (Error # 0): Negative prob.

     ```
     WARNING: Negative probabilities encountered. Incident energy: 2.e7 eV, worst case: -0.00572068236699
     ```

  2. Calculated and tabulated Q values disagree.
     reaction label 16: n[multiplicity:'2'] + Er169 + gamma (Error # 0): Q mismatch

     ```
     WARNING: Calculated and tabulated Q-values disagree: -6916283.243377686 eV vs -7258370. eV!
     ```

  3. Calculated and tabulated Q values disagree.
     reaction label 17: n[multiplicity:'3'] + Er168 + gamma (Error # 0): Q mismatch

     ```
     WARNING: Calculated and tabulated Q-values disagree: -12919553.47937012 eV vs -1.32617e7 eV!
     ```

  4. Energy range of data set does not match cross section range
     reaction label 17: n[multiplicity:'3'] + Er168 + gamma / Product: n / Distribution: / uncorrelated - energy - XYs2d: (Error # 0): Domain mismatch (a)

```
WARNING: Domain doesn't match the cross section domain: (13340400.0 -> 20000000.0) vs (13340700.0 -> 20000000.0)
```

5. Energy range of data set does not match cross section range
   reaction label 17: n[multiplicity:'3'] + Er168 + gamma / Product: gamma / Multiplicity:
   (Error # 0): Domain mismatch (a)

```
WARNING: Domain doesn't match the cross section domain: (13340400.0 -> 20000000.0) vs (13340700.0 -> 20000000.0)
```

6. Energy range of data set does not match cross section range
   reaction label 17: n[multiplicity:'3'] + Er168 + gamma / Product: gamma / Distribu-
   tion: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

```
WARNING: Domain doesn't match the cross section domain: (13340400.0 -> 20000000.0) vs (13340700.0 -> 20000000.0)
```

7. Energy range of data set does not match cross section range
   reaction label 17: n[multiplicity:'3'] + Er168 + gamma / Product: gamma / uncorrelated
   - energy - XYs2d: (Error # 0): Domain mismatch (a)

```
WARNING: Domain doesn't match the cross section domain: (13340400.0 -> 20000000.0) vs (13340700.0 -> 20000000.0)
```

8. Calculated and tabulated Q values disagree.
   reaction label 18: n + H1 + Ho169 + gamma (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -8259521.253875732 eV vs -8601030. eV!
```

9. Calculated and tabulated Q values disagree.
   reaction label 19: n + H2 + Ho168 (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -12842640.36056519 eV vs -1.29738e7 eV!
```

10. Calculated and tabulated Q values disagree.
    reaction label 20: Er171 + gamma (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: 6022530.004577637 eV vs 5.6817e6 eV!
```

11. Calculated and tabulated Q values disagree.
    reaction label 21: n + He4 + Dy166 + gamma (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: 391552.6491088867 eV vs 51908. eV!
```

12. Calculated and tabulated Q values disagree.
    reaction label 22: H1 + (Ho170_s ->Ho170 + gamma) (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -2746697.537567139 eV vs -3085660. eV!
```

13. Calculated and tabulated Q values disagree.
    reaction label 23: H2 + (Ho169_s ->Ho169 + gamma) (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -6034955.152954102 eV vs -6376450. eV!
```

14. Calculated and tabulated Q values disagree.
    reaction label 24: H3 + Ho168_s (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -6585407.419921875 eV vs -6715720. eV!
```

15. Calculated and tabulated Q values disagree.
    reaction label 25: He4 + (Dy167_s ->Dy167 + gamma) (Error # 0): Q mismatch

    ```
    WARNING: Calculated and tabulated Q-values disagree: 5809303.425537109 eV vs 5469280. eV!
    ```

- `njoy2012` Warnings:

  1. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
     groupr...compute self-shielded group-averaged cross-sections (0): GROUPR/conver (0)

     ```
     ---message from conver---cannot do complete particle production for mt= 16
                              only mf4/mf5 provided
     ```

  2. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
     groupr...compute self-shielded group-averaged cross-sections (1): GROUPR/conver (0)

     ```
     ---message from conver---cannot do complete particle production for mt= 17
                              only mf4/mf5 provided
     ```

  3. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
     groupr...compute self-shielded group-averaged cross-sections (2): GROUPR/conver (0)

     ```
     ---message from conver---cannot do complete particle production for mt= 22
                              only mf4/mf5 provided
     ```

  4. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
     groupr...compute self-shielded group-averaged cross-sections (3): GROUPR/conver (0)

     ```
     ---message from conver---cannot do complete particle production for mt= 28
                              only mf4/mf5 provided
     ```

  5. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
     groupr...compute self-shielded group-averaged cross-sections (4): GROUPR/conver (0)

     ```
     ---message from conver---cannot do complete particle production for mt= 32
                              only mf4/mf5 provided
     ```

  6. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
     groupr...compute self-shielded group-averaged cross-sections (5): GROUPR/conver (0)

```
        ---message from conver---cannot do complete particle production for mt= 91
                          only mf4/mf5 provided
```

- `njoy2012`   Errors:

  1. An angular distribution is negative
     acer...monte carlo neutron and photon data (0): Neg. P(Ejµ) (b)

```
        ---message from ptleg2---negative probs found
                          13 for mt= 51 e= 2.000E+07
```